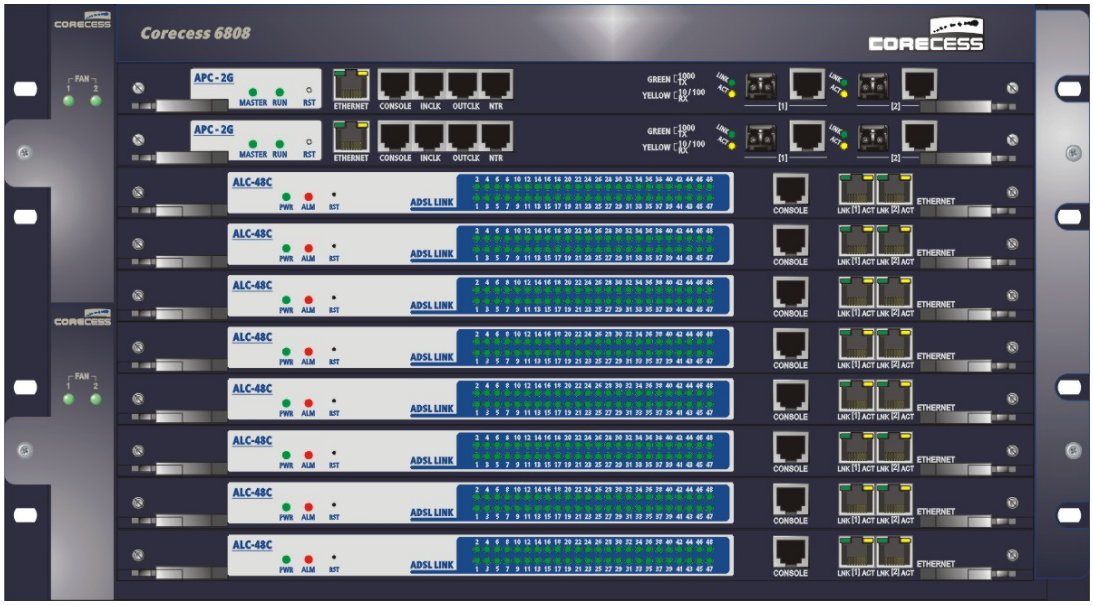
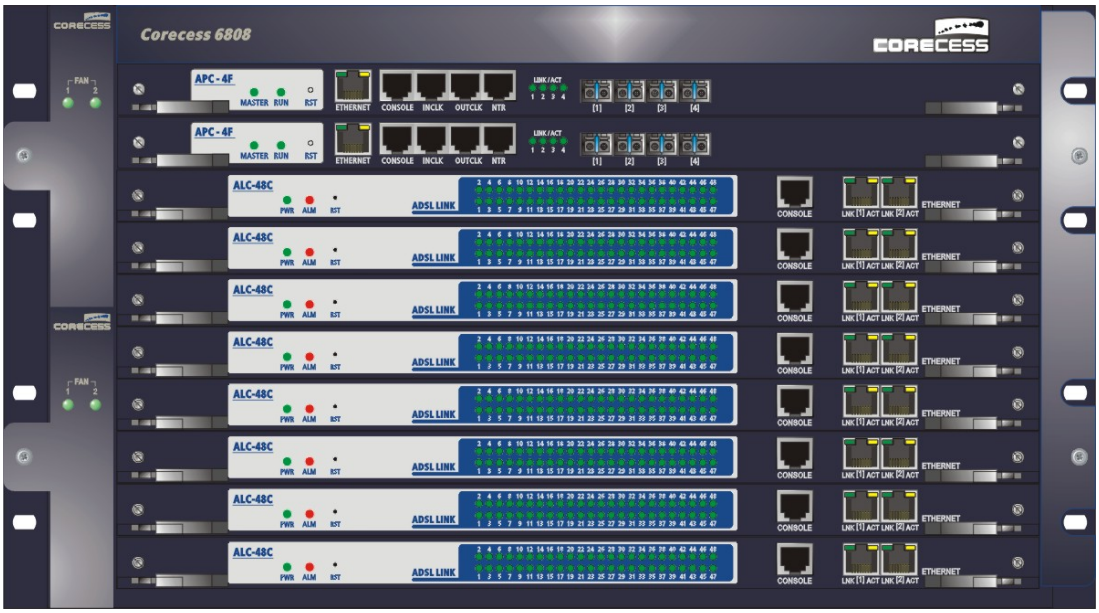
# New Product: Corecess 6808_APC Advanced IP DSLAM

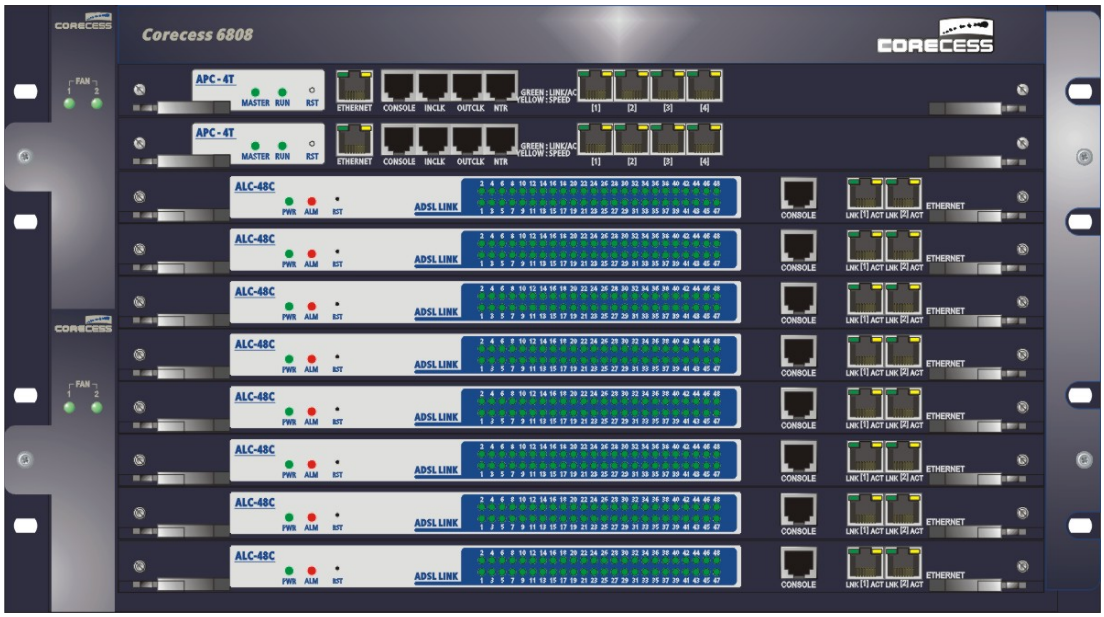
## Product Overview




**6808 APC-2G**




**6808 APC-4F**




**6808 APC-4T**

The Corecess 6808_APC is an advanced IP based DSLAM that can be used by service providers interested in offering broadband multi-service features on the last mile access network on copper based local loop.

Corecess 6808_APC is engineered to provide intelligent IP services as networks evolve. It offers various DSL interfaces and delivers advanced IP services that include QoS, multicast, subscriber management. These service features, stave off clogging and congestion of the bandwidth available to the users allowing smooth, easy and efficient passage of video, voice and data packets across the networks, which also enables operators to increase their revenues and maximize their profits manifold.

Corecess 6808_APC intelligently and economically combines two network devices into one efficient system. As compared to the legacy DSL systems, the Corecess 6808_APC system combines the functionalities of the legacy DSLAM and Router into one compact system. The superior and feature rich design makes Corecess 6808_APC the most economical and the most suitable solution for the next generation broadband access platforms. It provides among other advantages easy maintenance and easy installation, which in turn reduces operating cost and network down time to the service providers.

## Key Features and Benefits

### Multiservice Platform for MDU and MTU

- Corecess 6808_APC is designed for Internet services such as interactive gaming at home and video conferencing facility at office.

- Corecess 6808_APC offers ADSL and SHDSL as well as Gigabit Ethernet or Fast Ethernet to support a wide range of services.
- SHDSL interface provides leased line services for MTU at low cost.

## Internet Access

- High performance IP routing by routing architecture is performed in the hardware.
- Static IP routing for manually building a routing table of network path information.
- Support for all commonly deployed and industry standard IP unicast routing protocols (RIPv1, RIPv2, OSPF, BGP-4) for load balancing and constructing scalable LANs provided.
- Inter-VLAN IP routing for full Layer 3 routing between two or more VLANs.
- Routes local traffic and relieves the backbone network of burden.

## Subscriber Management

- Aggregates broadband traffic.
- IP management through Dynamic Host Configuration Protocol (DHCP) server and relay function.
- Network Timing Protocol (NTP) provides an accurate and consistent timestamp to all switches within the intranet for billing accuracy.

## Advanced Quality of Service for “Triple Play” service support

- Users can configure Corecess 6808_APC to optimally handle different types of traffic: voice, video or high priority data traffic.
- Extensive flow, packet classification and processing through deep packet classification using source/destination MAC address, source/destination IP address, and port number based on Layer 4 TCP/UDP along with application specific fields.
- 802.1p class of service (CoS) and Differentiated Services Code Point field (DSCP) classification via marking and reclassification on a per packet basis.
- Multiple PVC and ATM traffic management support per DSL link for Triple Play Service. **(Future software release)**
- Quality of service ACLs on all ports to ensure proper marking on a per packet basis.
- Several kinds of Access Control Lists (ACLs) make for a reliable network.
- Sophisticated traffic shaping, policing, rate limiting and packet modifications for each application service characteristics.
- Strict priority queuing to guarantee that the highest priority packets will always get serviced ahead of all other traffic.
- No performance penalty for highly granular quality of service functionality.

## Security

- ACLs on all VLANs to prevent unauthorized data flows to be bridged within VLANs.
- Private VLAN edge provides security and isolation between ports on a switch, ensuring that voice traffic travels directly from its entry point to the aggregation device through a virtual path and cannot be directed to a different port.
- MAC based port level security prevents unauthorized stations from accessing the switch.
- DHCP filtering also prevents unauthorized stations from accessing the switch.
- Multilevel security on console access prevents unauthorized users from altering the switch configuration.
- Telnet access control enables centralized control of the switch and restricts unauthorized users from accessing and altering the switch configuration.

## Multicast

- Supports high performance IP multicast by multicasting architecture performed in the hardware.
- Internet Group Management Protocol (IGMP) and IGMP snooping provides for fast client joins and leaves of multicast streams and limits bandwidth intensive video traffic to only the requestors.
- Distance Vector Multicast Routing Protocol (DVMRP) tunneling for interconnecting two multicast-enabled networks across non-multicast networks.
- Protocol Independent Multicast (PIM) is applicable for IP multicast routing within a network that enables the network to receive the multicast feed requested and for the switches not participating in the multicast to be pruned. Support for PIM sparse mode (PIM-SM).

## Scalability

- Highly scalable in port density and speed. (**Refer Ordering Guide**)

## Reliability

- Centralized main processor, uplink, Annex-C clock and power resource redundancy.
- Accounting data redundancy to maximize network provider's profit.

## Powerful Manageability

- Built in Web based Management Software provides an easy to use Web based management interface through a standard web browser. (Web Console)
- Simple Network Management Protocol (SNMP) v2c and Telnet interface support delivers comprehensive in-band management and a command-line interface (CLI)-based management console provides detailed out-of-band management.
- CLI provides easy to use user interface and command set.

- Through ***ViewlinX***$^{TM}$ network management software user can manage Corecess 6808_APC in detail like in-band and out-band management.
- VLAN trunks can be created from any port using either standards based 802.1Q tagging or VLAN management command.
- Embedded Remote Monitoring (RMON) software agent is a monitoring specification that enables various network monitors and console systems to exchange network-monitoring data which can be classified as four RMON groups (History, Statistics, Alarms and Events) for enhanced traffic management, monitoring, and analysis.
- Trivial File Transfer Protocol (TFTP) reduces the cost of administering software upgrades by downloads available from a centralized location.
- Multifunction LEDs per port for port status, half-duplex/full-duplex, 10BaseT/100BaseTX indication, as well as switch level status LEDs for system, redundant power supply provides a comprehensive and convenient visual management system.

### Easy Deployment

- Auto-negotiating on all ports automatically selects half or full duplex transmission mode to optimize bandwidth.
- Dynamic Host Configuration Protocol (DHCP) relay allows a broadcast DHCP request to be forwarded to the network DHCP server.
- IEEE 802.3z compliant 1000BaseSX, 1000BaseLX/LH, 1000BaseTx, 100BaseTx, 100BaseFx physical interface support through a field replaceable optical module provides customers unprecedented flexibility in switch deployment and also provides various network interfaces.
- The default configuration stored in Flash memory ensures that the system can be quickly connected to the network and can pass traffic with minimal user intervention.

## Specifications

### Hardware

| **Technical Specification** | |
|---|---|
| **Description** | **Specification** |
| Performance | APC (Advanced Process Card):<br>3.6 Gbps non-blocking switching fabric.<br>3.6 Gbps maximum forwarding bandwidth at Layer 2 and Layer 3.<br>13 Mpps forwarding rate for 64-byte packets.<br>64 MB packet buffer. |

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| | 256Mbytes (SDRAM, DIM type) Main memory.<br>512Kbytes (EEPROM) Boot ROM.<br>40Kbyte CAM (with 32K external CAM)<br>64Mbytes (Compact Flash) non-volatile memory used for containing OS code as well as configuration.<br>PowerPC 405GP 200MHz (Maker: IBM) used for controller.<br>Configurable up to 40K MAC addresses (L2 only).<br>Configurable up to 40K unicast routes (L3 only).<br>Configurable up to 40K multicast routes (multicast routing only).<br>Configurable up to 4096 VLAN.<br>ALCA-48P/ALCB-48P/ SLC-48P:<br>128 MB SDRAM, 2MB SRAM, 4MB Flash Memory. |
| Connectors and Cabling | ADSL and SHDSL interface: Telco 50 (CHAMP) connector for lines, Operable over UTP, CPEV, TIV, SH and Interphone Cable.<br>APC-2G<br>Gigabit Ethernet ports: Two 10/100/1000BaseTx RJ-45 (Auto Sensing) connectors, two-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling (Category 3, 4 supports only 10Mbps) and SFP based ports, Dual LC fiber connectors, single-mode or multimode fiber; Fiber optic cable with LC connectors**. If SFP (Optic) module is installed, the 1000Base-Tx port is disabled automatically.**<br>APC-4T<br>10/100BaseTX ports (Auto Sensing): Four RJ-45 connectors, two-pair Category 3, 4, or 5 unshielded twisted-pair (UTP) cabling (Category 3, 4 supports only 10Mbps).<br>APC-4F<br>10/100BaseFX ports: Four LC connectors, Dual LC fiber connectors<br>Clock management ports: RJ-45 type.<br>Management console port: 8-pin RJ-45 connector, Serial cable with RJ-45 to DB9 adaptor for PC connections. |
| Power Connectors | Customers can provide power to a switch by using Power Supply. The connectors are located on the rear side of the switch unit.<br>The power supply is an auto-ranging unit.<br>DC inlet (Terminal Type) used for DC power supply. (Located on the rear side) |
| Fault Tolerance | Redundant APC.<br>Hot-swappable media modules. |
| Mean Time Between Failure (MTBF) | 8 X ALCA-48P/ALCB-48P with 2 X APC: 68163.1 hours<br>8 X SLC-48P with 2 X APC: 68488.2 hours |

### Power Specifications

| Description | Specification |
|---|---|
| Power consumption | 791.65 W (maximum) 3,000 BTUs per hour. |
| AC input voltage/frequency | 100 to 240 VAC (auto-ranging), 50 to 60 Hz. |
| DC Input Voltages | -48V @ 18.75 A with 20% variation. |

**Physical and Environmental Specifications**

| Description | Specification |
|---|---|
| Dimensions and (H x W x D) | 19 inch Rack Mountable.<br>267 x 440 x 337 mm. (10.5 x 17.3 x 13.3 in)<br>6 rack-unit (RU) high |
| Weight | 31 kg (68.3 lb) fully configured, 16 kg (35.3 lb) (Backplane only), 1.5 kg (3.3lb) (Interface card). |
| LED | System status (APC): MASTER/SLAVE and RUN (POWER).<br>Gigabit port Ethernet: Speed indicator and ACT<br>NMS port status: LINK/ACT and 10/100 indicator.<br>ADSL port status: PWR (Power) and ALM (Alarm) and ADSL Link.<br>SHDSL port status: PWR (Power) and ALM (Alarm) and ADSL Link.<br>Fan status LED: Green (On) / Orange (Off). |
| Operating temperature | 0 to 50°C (32 to 122°F). |
| Storage temperature | -30 to 75°C (-22 to 167°F). |
| Operating relative humidity | 5 to 90% (non-condensing). |
| Operating altitude | Up to 3,000 m (9,842 ft). |
| Storage altitude | Up to 4,000 m (13,123 ft). |
| | Not intended for use as desktops or in open office environments. |

**Regulatory Certifications and Approvals**

| Description | Specification |
|---|---|
| Standards | ADSL line interface:<br>ANSI T1.413 issue2<br>ITU-T G.992.1 (G.dmt), G.992.2 (G.lite), G.992.3, G.992.4, G.992.5 Annex A/B/C, G.994.1<br>Line Code: DMT<br>Connector Loops: 1 pair (2 wire mode).<br>Data Rate:<br>Annex A<br>Up to 8/24 Mbps (Downstream speed range of ADSL/ADSL2+).<br>Up to 1 Mbps (Upstream speed range).<br>Annex B<br>Up to 8/24 Mbps (Downstream speed range of ADSL/ADSL2+).<br>Up to 1 Mbps (Upstream speed range).<br>Annex C (**planned for future implementation**) |

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| | Up to 8/24 Mbps (Downstream speed range of ADSL/ADSL2+).<br>Up to 1 Mbps (Upstream speed range).<br><br>SHDSL line interface:<br>ITU-T G.991.2 (G.SHDSL), G.994.1<br>Line Code: 16 TC-PAM.<br>Data Rate: Up to 2.3 Mbps (Up/Down stream) (2 wire mode)<br>Up to 4.6 Mbps (Up/Down stream) (4 wire mode)<br>Distance: No attenuation up to a distance of 3 Km, and for 8 Km @ 26AWG.<br><br>IEEE 802.1p CoS (Class of Service).<br>IEEE 802.1q VLAN (VLAN tagging).<br>IEEE 802.3 10BaseT specification.<br>IEEE 802.3u 100BaseTX specification.<br>IEEE 802.3x full duplex on 10BaseT, 100BaseTX, and 1000BaseT ports (Flow Control).<br>1000BaseX (GBIC).<br>1000BaseSX.<br>1000BaseLX/LH.<br>RMON I standards (4 Groups: statistics, history, alarm, events).<br>Extended RMON.<br>SNMPv2c. |
| Safety Certifications | VCCI **(planned)**<br>CE **(planned)**<br>NEBS level 1 **(planned)**<br>FCC Part 15 **(planned)**<br>FCC Part 68 **(planned)**<br>A-tick **(planned)**<br>UL **(planned)** |

## Software

### Software Management

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| System Configuration | Command Line Interface (CLI): Same as in/out-band management.<br>Local: RS-232 console port (For out-band management).<br>Remote: Telnet and Web (For in-band or out-band management). |
| Management and Security | APC:<br>Management protocol: SNMP, RMON and MIB-II.<br>Remote software upgrades using TFTP or via Network Management Software.<br>System log file (Useful for configuration and error information). (future software release)<br>Command log file (Useful for operation history).<br>Remote Access List of the hosts that can connect with the system.<br>Port mirroring (Useful for diagnosis or security service). |

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| | RADIUS server connectivity, Web-based, 802.1x<br>Dynamic Host Configuration Protocol (DHCP) for IP resolution.<br>DHCP Server and Relay services.<br>NTP (Network Time Protocol).<br>CPE Management:<br>Port Filtering: Port blocking.<br>Max CPE: Restriction on the maximum number of CPEs supported on each DSL port.<br>IP Filtering.<br>DHCP Filtering: Prevents damage caused by unauthorized private DHCP Server operation.<br>NetBEUI and NetBIOS Filtering.<br>Static IP chain: Prohibits illegal IP address usage of subscribers.<br>Access Control List. |
| Reliability | Physical: CPU, Uplink, Annex-C clock, Power redundancy (Battery Backup port)<br>Logical: STP, RSTP. |
| VLAN | Supports IEEE 802.1q VLAN Tagging.<br>Multicast per VLAN. |
| Routing | Wire speed packet forwarding.<br>Wire speed packet filtering.<br>Static Routing.<br>Standard protocols: RIP v1/v2, OSPF, VRRP, BGP-4 and IS-IS **(Future software release)** |
| Link aggregation | IEEE 802.3ad Link aggregation.<br>Max. 26 aggregation groups available regardless of port type. |
| QoS | Layer 4-7 application-flow switching and QoS.<br>Rate Limiting.<br>Diff-Serv.<br>Multi-Field Packet Classification on a per packet basis.<br>802.1p Marking and Reclassification.<br>ToS Marking and Reclassification.<br>Diff-Serv Differentiated Services Code Point field (DSCP) Marking and Reclassification.<br>Congestion Control: Weighted Random Early Detection (WRED) to avoid congestion at the egress queues.<br>Scheduling: Weighted Fair Queuing (WFQ).<br>Multi level Queue Support : 8 queues per PVC<br>Multiple PVC support : 5 PVC per port (future software release)<br>ATM Traffic management : UBR, CBR, rt-VBR, nrt-VBR, Unshaped (future software release) |
| Multicast and Multicast Routing | IGMP v2.0.<br>IGMP snooping.<br>DVMRP<br>PIM-SM |

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| EMS | Equipment Management System: Java based equipment management system.<br>Operating System: Solaris, Linux, Windows (98/2000/XP) which supports JAVA VM. |
| IETF Standards | RFC 768 UDP<br>RFC 791 IP<br>RFC 792 ICMP<br>RFC 826 ARP<br>RFC 768 UDP<br>RFC 783 TFTPv2<br>RFC 793 TCP<br>RFC 854 Telnet<br>RFC 951 BootP<br>RFC 1058 RIP v1<br>RFC 1075 DVMRP<br>RFC 1157 SNMPv2c<br>RFC 1245 OSPF Protocol Analysis<br>RFC 1246 Experience with the OSPF Protocol<br>RFC 1265 BGP Protocol Analysis<br>RFC 1266 Experience with the BGP Protocol<br>RFC 1349 Type of Service in the Internet Protocol Suite<br>RFC 1403 BGP OSPF Interaction<br>RFC 1483 Bridged Protocols with LLC<br>RFC 1519 CIDR: an Address Assignment and Aggregation Strategy<br>RFC 1587 OSPF NSSA Option (Future software release)<br>RFC 1657 Definitions of Managed Objects for BGP-4 using SMIv2<br>RFC 1723 RIP v2<br>RFC 1771 BGP-4<br>RFC 1745 BGP-4/IDRP for IP and OSPF Interaction<br>RFC 1765 OSPF Database Overflow **(Future software release)**<br>RFC 1771 BGP-4<br>RFC 1772 Application of BGP in the Internet<br>RFC 1773 Experience with the BGP-4 Protocol<br>RFC 1774 BGP-4 Protocol Analysis<br>RFC 1812 Router Requirements<br>RFC 1966 BGP Route Reflection Alternative to full mesh IBGP<br>RFC 1997 BGP Communities Attribute<br>RFC 1998 BGP Community Attribute in Multi-home Routing<br>RFC 2082 RIP-2 MD5 Authentication<br>RFC 2131 DHCP<br>RFC 2236 Internet Group Management Protocol, Version 2<br>RFC 2328 OSPFv2<br>RFC 2236 IGMP-2<br>RFC 2338 VRRP **(Future software release)**<br>RFC 2362 PIM-SM |

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| | RFC 2370 OSPF Opaque LSA Option **(Future software release)**<br>RFC 2439 BGP Flap Damping **(Future software release)**<br>RFC 2453 RIPv2<br>RFC 2474 Definition of the Differentiated Services Field (DS Field) in the IPv4 and IPv6 Headers.<br>RFC 2475 An Architecture for Differentiated Services<br>RFC 2573 SNMP Applications<br>RFC 2796 BGP Route Reflection Alternative to full mesh IBGP<br>RFC 2842 Capabilities Advertisement with BGP-4<br>RFC 2858 Multi-protocol Extensions for BGP-4<br>RFC 2918 Route refresh capability with BGP-4<br>RFC 3137 OSPF Stub Router Advertisement **(future software release)**<br>RFC 3195 Syslog **(future Software release)** |
| Management Standards and Management MIB | Corecess-BASIC-MIB<br>Corecess-SMI<br>Corecess 6808 MIB<br>RFC 1213 MIB-II<br>RFC 1253 OSPF-MIB<br>RFC 1354 IP Forwarding MIB<br>RFC 1493 BRIDGE-MIB<br>RFC 1657 BGP4-MIB<br>RFC 1724 RIP v2 MIB<br>RFC 1757 RMON-MIB<br>RFC 1771 BGP4-MIB<br>RFC 1850 OSPF2 MIB<br>RFC 1907 SNMPv2-MIB<br>RFC 2011 IP-MIB<br>RFC 2012 UDP-MIB<br>RFC 2096 IP-FORWARD-MIB<br>RFC 2233 IF-MIB<br>RFC 2328 OSPF-MIB |

## Ordering Information

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| ***Corecess 6808 Base Configuration*** | |
| 6808-CHS | 2+8 slot chassis (2-slot for Processor modules with 1+1 protection and 8 slot for modules), Chassis, Backplane, Two Fan Trays, Rack Mount Kit, Console cable included, Two DC -48V power inlets only. |
| ***Corecess 6808 Processor Modules*** | |

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| 6808-APC-2G | QoS featured advanced processor card for Corecess 6808-APC,3 clock synchronizing port for Annex C, Optional 2 Gigabit Ethernet ports for uplink and/or cascade - default Two 1000Base-Tx (RJ-45) ports, Management Interface (One Ethernet and One RS 232), switching and L2/3/packet processing features; Manual. Two Giga SFP slot without SFP optical module (If using Optic module 1000BaseTx(RJ-45) port disabled) |
| 6808-APC-4T | QoS featured advanced processor card for Corecess 6808-APC, 3 clock synchronizing port for Annex C, 4 100Base-Tx Fast Ethernet ports (RJ-45) for uplink and/or cascade ports, Management Interface (One Ethernet and One RS 232), switching and L2/3/packet processing features; Manual. |
| 6808-APC-4F | QoS featured advanced processor card for Corecess 6808,1 clock synchronizing port, 4 100Base-Fx Fast Ethernet ports (LC type SM fiber up to 15Km) for uplink and cascade ports, Management Interface (One Ethernet and One RS 232), switching and L2/3/packet processing features; Manual. |
| ***Modules for the Corecess 6808*** | |
| 6808-ALCA-48P | 48-port ADSL2+ Line card for Annex A. QoS Support. |
| 6808-ALCB-48P | 48-port ADSL2+ Line card for Annex B. QoS Support. |
| 6808-SLC-48P | 48-port SHDSL Line card, QoS Support. |
| ***Optical Coupler for the Corecess 6808*** | |
| 6808-OPC | Optical coupler for the Corecess 6808. |
| ***FAN Trays for the Corecess 6808*** | |
| 6808-FAN | Spare Fan tray for the Corecess 6808. |
| ***GBIC Port Adapters*** | |
| SFPG-SX | Gigabit SFP Adapter SX Short Distance SC Type Multi mode fiber for GBIC port,<br>Distance-220m (62.5um MMF)/500m (50um MMF). |
| SFPG-LX | Gigabit SFP Adapter LX Long Distance SC Type Single mode fiber for GBIC port,<br>Distance-550m (62.5um & 50um MMF)/10Km (9um SMF). |
| ***AC Power Cords*** | |
| CAB-COS-US | AC Power Supply Cord, US (type B). |
| CAB-COS-AU | AC Power Supply Cord, Australia (Type I). |
| CAB-COS-EU | AC Power Supply Cord, Europe (Type F) - Germany, Spain, Sweden, Finland etc. |
| CAB-COS-JP | AC Power Supply Cord, Japan (Type B). |

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| CAB-COS-UK | AC Power Supply Cord, UK and HK (Type G). |
| CAB-COS-KR | AC Power Supply Cord, Korea (Type F). |
| CAB-COS-US1 | AC Power Supply Cord for modem, US (type A). |
| CAB-COS-AU1 | AC Power Supply Cord for modem, Australia (Type I, same shape but different size and spec). |
| CAB-COS-EU1 | AC Power Supply Cord for modem, Europe (Type C but different compared to that of Korea C type) - excluding UK, Italy. |
| CAB-COS-JP1 | AC Power Supply Cord for modem, Japan (Type A but different compared to that of US because of different Pin Size). |
| CAB-COS-UK1 | AC Power Supply Cord, UK (Type G but different spec of general G type). |
| CAB-COS-KR1 | AC Power Supply Cord for modem, Korea (Type C). |
| ***Splitters for the DSLAMs (Corecess 6808)*** | |
| MSCA-SP48A | 48 Port ADSL/ADSL2+ Splitter Card. (Annex. A supported) |
| MSCA-SP48B | 48 Port ADSL/ADSL2+ Splitter Card. (Annex B supported) |
| MS384CA-SLF | 8 Card Splitter Shelf. |
| ***Cable Assemblies for the DSLAM and DSLAM Splitters*** | |
| MS432CA-SCBL10 | Single cable 1M. |
| MS432CA-SCBL20 | Single cable 2M. |
| MS432CA-SCBL30 | Single cable 3M. |
| MS432CA-SCBL40 | Single cable 4M. |
| MS432CA-ICBL20 | I cable 2M. |
| MS432CA-ICBL30 | I cable 3M. |
| MS432CA-ICBL40 | I cable 4M. |
| **Product note (Corecess 6808):** | |
| 1. Refer to the Manuals section and Accessories section from the product manual, SFP port adapter, clock distributor for Annex C application, splitter and cable assemblies, optical coupler, spare FAN tray, and power options for AC application. | |
| 2. The Corecess 6808 base configuration does not include modules. Orders for Modules must be placed separately. | |